

## REMARKS

The March 3, 2010 Official Action has been carefully considered. In view of the amendment submitted herewith and these remarks, favorable reconsideration and allowance of this application are respectfully requested.

At the outset, it is noted that a shortened statutory response period of three (3) months was set in the March 3, 2010 Official Action. The initial due date for response, therefore, was June 3, 2010. A petition for a three (3) month extension of the response period is submitted with this Amendment and Request for Reconsideration, which is being filed before the expiration of the three (3) month extension period.

As a preliminary matter, claims 1-69, 73-80 have been withdrawn from consideration in this application as a result of the restriction requirement set forth in the preceding Official Action. Applicants reiterate that the election of the subject matter of claim 70-72 for examination in this application is without prejudice to their right to file one or more continuing application, as provided in 35 U.S.C. §121, on the subject matter of the non-elected claims.

In the March 3, 2010 Official Action, claims 70-72 are objected to because claim 70 depends on a non-elected claim 1.

Turning to the merits of the March 3, 2010 Official Action, claims 70 and 71 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent 6,207,134 to Fahlvik et al. (hereinafter "Fahvlik").

Claims 70-72 have also been rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent 6,270,748 to Annan et al. (hereinafter "Annan"), considered in view of U.S. Patent 6,955,639 to Hainfeld et al (hereinafter "Hainfeld"). In support of this ground of rejection, the Examiner contends, at pages 5-6 of the March 3 Official Action that "since Hainfeld teaches that Gadolinium metal is used as an MRI contrast agent and the nanoparticles are administered to a subject to target specific organs of the body and Annan also teaches using Gadolinium in MRI and the nanoparticles are administered to a subject to target specific organs/tissue of the body, it would have been obvious to one of ordinary skills in the art to use the particle size range of 0.8-400 nm as taught by Hainfeld and covalently immobilize ligands on the core of the nanoparticles in Annan so that such ligands can specifically bind to the target organs/tissue being imaged for the advantage that small size range nanoparticles (0.8-400 nm) can penetrate the endothelial

barrier of blood vessels and can diffuse throughout the parenchyma of the targeted tissue. One of ordinary skills in the art would have a reasonable success in combining these two teaching because both references teaches using metal nanoparticles, specifically gadolinium metal nanoparticles to specifically target an organ/tissue of a subject and that these nanoparticles must be administered into the body of a subject.”

The foregoing objections and rejections constitute all of the grounds set forth in the March 3, 2010 Official Action for refusing the present application.

In accordance with the present amendment, claim 70 has been amended to incorporate the subject matter of original claim 1, as well as that of claim 12. As a result of this amendment, the above-noted claim objection is believed to have been overcome.

No new matter has been introduced into this application by reason of the present amendment, entry of which is respectfully requested.

For the reasons set forth below, applicants respectfully submit that the §102(b) rejection of claims 70 and 71 based on Fahlvik and the §103(a) rejection of claims 70-72 based on the combined disclosures of Annan and Hainfeld lack merit and, in any event, cannot be maintained in view of the present amendment. These grounds of rejection are, therefore, respectfully traversed.

**A. Fahlvik fails to provide evidence that the MRI method of claims 70 and 71 lacks novelty.**

Rejections under 35 U.S.C. §102 are proper only when the claimed subject matter is identically disclosed or described in the reference cited as evidence of lack of novelty. In re Arkley, 172 U.S.P.Q. 524 (CCPA 1972). Applying this rule of law to the present case, the §102(b) rejection of claims 70 and 71 based on Fahlvik is improper because the subject matter of the rejected claims is nowhere identically disclosed or described in Fahlvik. Indeed, the present invention is patentably different from Fahlvik in at least the following respects.

First, Fahlvik does not describe nanoparticles in which the metallic core is covalently linked to a plurality of ligands. On the contrary, Fahlvik describes particles comprising a metal oxide core which is coated with an agent that provides ionic interactions with the core (see, in particular, col. 3, lines 32-38 and col. 6, lines 61-63 of Fahlvik).

Secondly, Fahlvik does not describe nanoparticles wherein the ligands incorporate or chelate a lanthanide.

Inasmuch as Fahlvik fails to identically disclose or describe all of the claim recitations of applicants' claim 71 and 72, the §102(b) rejection of those claims based on Fahlvik is improper and should be withdrawn upon reconsideration.

**B. The combined disclosures of Annan and Hainfeld fail to render obvious the subject matter of claims 70-72.**

All claim recitations must be considered in assessing non-obviousness under 35 U.S.C. §103. In re Saether, 181 U.S.P.Q. 36 (CCPA 1974). It has long been held that when the Examiner disregards specific claim recitations that distinguish over the prior art, the rejection is improper and will be overturned. In re Glass, 176 U.S.P.Q. 489 (CCPA 1973). Applicants take exception to the obviousness rejection of claims 70-72 based on the combined disclosures of Annan and Hainfeld for at least the following reasons.

Annan describes very different particles from those specified in the present claims. The core of the Annan particles is polymeric and gadolinium ions are bound or sequestered by deprotonated acidic groups of the polymeric matrix (see, e.g. col. 5, lines 20-24 of Annan). There is no disclosure in Annan of a metal core covalently linked to a plurality of ligands, as acknowledged by the Examiner. Nor is there any disclosure in Annan of a core of less than 2.5 nm in diameter, which the Examiner also acknowledges.

Hainfeld provides very limited discussion of MRI, since Hainfeld is primarily concerned with enhancing radiation effects. Moreover, the nanoparticles of Hainfeld would not appear to combine readily with the polymeric structure described by Annan.

There is no suggestion or teaching in any of the cited references to provide a nanoparticle having a metal core covalently linked to a plurality of ligands, wherein the ligands incorporate or chelate a lanthanide.

Experimental results that exemplify the nanoparticles having the configuration called for in the present claims for use in MRI are provided, at least, in connection with Example 3 and Figures 7 and 8 of the present application.

For all of the above reasons, the §103 rejection of claims 70-72 based on the combined

disclosures of Annan and Hainfeld cannot be maintained and should, therefore, be withdrawn upon reconsideration.

### C. Conclusion

In view of the present amendment and foregoing remarks, it is respectfully requested that the rejections and objection set forth in the March 3, 2010 Official Action be withdrawn and that this application be passed to issue, and such action is earnestly solicited.

Respectfully submitted,

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